

Work Order ID 67797

Wednesday, March 30, 2011 12:45:49 PM

Page 1

Item ID: D6005-128

Accept

Setup Start

Revision ID:

Stop

Item Name: Crosstube Material

Start Date: 3/30/2011 Start Qty: ~~28.00~~ ⁴⁰

Required Date: 10/8/2011 Req'd Qty: 28.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan: *ME*Date: *11-03-30*

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D6005

Rev A

100

0.00



PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 13753

a) Order as per Dwg D6005

b) Material: 2.750 x 0.375 wall 7075-T6/T6511 (WW-T-700/7 or □QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube

c) Minimum ultimate tensile strength = 77 ksi

d) Minimum tensile yield strength = 66 ksi

e) Tolerance are per ASTM B210 (see details on Dwg D6005)

f) Material certification required

CL *11/03/31* *(28)*

110

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

Ensure material certification is attached

Pull 4/2 *(42)*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 67797

Wednesday, March 30, 2011 12:45:49 PM

Page 2

Item ID: D6005-128

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Cust Item ID:

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC6- Inspect dimensions to drawing

0.00



QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6005

Sulos/60

(x42)

100cc check

with 1000g 20

see attach sheet

150

Identify as per dwg & Stock Location: 46

0.00



Packaging

Memo

0.00

Packaging

DP/SAD / SW

11-8-10

(42)

160

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

OK 11/08/12

MF

11-08-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, March 30, 2011 12:45:41 PM

Page 1

Work Order ID: 67797



Parent Item: D6005-128



Parent Item Name: Crosstube Material


Start Date: 3/30/2011

Required Date: 10/8/2011

Start Qty: 28.00

Required Qty: 28.00

Comments: IPP Rev:C 04.06.15 Added tolerance to Step 2 KJ/JLM
IPP Rev:D 08-09-23 fixe typo in dwg name DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6005-128P  Crosstube material		Purchased	No			110	Each	0.0000	1	28		4/11/11	92

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

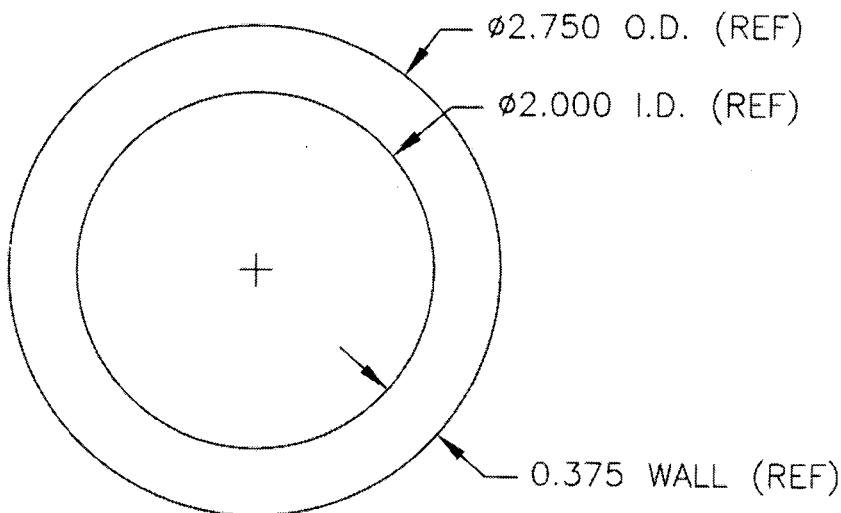
NOTE: Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D6005	REV. A SHEET 1 OF 1
DATE 00.11.17		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.17	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

3254
138
413
359
38
35
RELEASED
00.11.24 *[Signature]*



NOTES

- 1) D6005-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 128" LONG TUBE: D6005-128

- 2) MATERIAL: 2.750 OD x 0.375 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.006 MEAN (±0.012 INCLUDING OVALITY)
WALL: ±0.015 MEAN (±0.038 INCLUDING ECCENTRICITY)
LENGTH: XXX +0.125/-0.000
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- # 67797*

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PO REPRINT

Purchase Order ID PO13753

Purchase Order Date 3/31/2011

PO Print Date 4/21/2011

Page Number 1 of 2

Order From :

VU-ALU001

ALUMINIUMWERK UNNA AG
UELZENER WEG 36, 59425 UNNA
GERMANY, GERMANY

Contact Name

Vendor Phone

Vendor Fax

Vendor Account Nbr

303 755 5936

303 755 5672

Buyer

Requisition Nbr

Tax Resale Nbr

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

USD

Destination-Collect

REVISED
QTS.

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req. Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6005-128P	Crosstube material	9/30/2011 Yes	40.00 Each	Yours ppd	\$470.0000	\$18,800.00
		Special Inst:	EXTRUDE AS PER DWG D6005 REV. A B67797 MATERIAL: 7075-T6/T6511 AS PER WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11 SEAMLESS TUBE SIZE: 2.750" O.D X 2.000" I.D X 0.375" WALL MINIMUM ULTIMATE TENSILE STRENGTH = 77 KSI MINIMUM TENSILE YIELD STRENGTH = 66 KSI TOLERANCE ARE PER ASTM B210				
2	D6011-115P	Crosstube Material	11/30/2011 Yes	20.00 Each	Yours ppd	\$687.0000	\$13,740.00
		Special Inst:	EXTRUDE AS PER DWG D6011 REV. A1 B67798 MATERIAL: 7075-T6/T6511 AS PER WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11 SEAMLESS TUBE				

4/21/2011

Packinglist AL Unna AG

Boxmarking:

We hereby declare that the wooden packing material are totally free from bark and apparently free from live plant pests

S:IVERSANDIUSA_PacklisteW41291_1

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde:

Dart Aerospace Ltd.

Client:

1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer:

877/11

Cert No.: / No. du certificat:

Bestellnummer:

PO 13753

Order No. / No. de commande

Auftrag:

41291/1

Our Reference/Notre Reference:

Produkt:

Rohre nahtlos gepresst

Product / Produit:

Tubes seamless extruded

Spezifikation:

AMS - QQ - A - 200/11E; Spezifikation Dart Aerospace 6005

Specification:

Werkstoff:

7075

Alloy/Alliage:

Zustand:

T 6511

Temper/État

Abmessung

2,750 INCH x 2,000 INCH x 0,375 INCH x 128,000 INCH

Size / Dimension

D6005-128 2.750 x 0.375 x 128

Kennzeichnung

ALUnna - Cert No. 877/11 - 7075 - T6511 - Cast No.- AMS QQA 200/11 - 2.750" OD X 0.375" Wall - Heat Lot
No. 400859 - ALUnna Order Conf. No. 41291/1-1 PO. 13753

Marking/Marquage:

Lieferung

pcs.

lbs

Country of Manufacture: Germany

Delivered Material / Matériel délivré:

42

1548

Products are in accordance with applicable RoHS

1. Chemische Analyse

Chemical Analysis / analyse chimique

Elemente ohne Grenzwerte:

einzel max. 0,05 %, insgesamt 0,15 %

Charge/ Cast No.	min.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
	max.	0,40	0,50	1,2 2,0	0,30	2,1 2,9	0,18 0,28	5,1 6,1	0,20					
5645/11		0,089	0,178	1,413	0,032	2,519	0,205	5,773	0,034	0,002	0,0173	0,0001	0,0013	0,0002

Hydrogen content: 0,10

ccm/100 g Al Elements without indication < 0,01 %

country of melt manufacturer: Germany

6251/11	0,104	0,184	1,517	0,047	2,435	0,212	5,850	0,035	0,004	0,0255	0,0001	0,0015	0,0001
---------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------	--------	--------

Hydrogen content: 0,11

ccm/100 g Al Elements without indication < 0,01 %

country of melt manufacturer: Germany

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
min. max.	77,0	66,0				
1	86,710	79,315	10,0			400859
2	86,130	78,735	9,0			

8 mols

Cast No.: 6251 = 14 pcs ; 5645 = 28 pcs

RMS outside 25 - max. 20,0 µ"

**Ergebnis der
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

KrummheuerM



Certified acc. DIN EN ISO 9001:2008 and DIN EN 9100:2003
valid until 2013-11-10

Cert.- Req. No.: 001959 QM08; 001959 ASH



ALUnna

Abnahmebeauftragter

01.08.2011

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany

Hand-drawn diagram showing a large circle with a smaller concentric circle inside. A vertical line passes through the center of the circles. Handwritten notes include:

- Reason #1
- Marker's must be up. 1st
- Reason #3

Reason:
H₂

Reason
they

~~ube. 12~~

tube 24

Reason is 3

REFERENCE ONLY

